Stormwater CONNECTIONS

Fall 2004

What's Inside...

In Sydney, Australia, cigarette litter is taken quite seriously and warrants a $200 fine. One of their mottos: Don't be a tosser – bin your butt.

CITY OF EUGENE STORMWATER MANAGEMENT PROGRAM

Stormwater Connections is published by the City of Eugene Public Works Department to enhance awareness of stormwater and related surface water management issues.

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Unlikely suspects

Would you drink a glass of water with a cigarette butt floating in it? How would you feel if your kitchen sink was filled with pet waste? Disgusted! And yet those very items wind up in our waterways — the same places we depend on for drinking water, recreation, and homes for fish and wildlife.

A lot of attention is paid to the environmental damage caused by pesticide-laced runoff and gasoline and oil spills. But have you thought about some of the other pollutants that wind up in our rivers and streams? They may not get a lot of press, but they are definitely part of the problem, and keeping them out of our waterways is part of the clean water solution.

What's in a butt?

Smokers discard billions of cigarette butts yearly, tossing them outside buildings and on parking lots and streets where wind and rain carry them into storm drains that empty into streams and rivers. The notion that cigarette filters are biodegradeable is a myth. 95% of cigarette filters are made of cellulose acetate, a plastic that takes about 5 years to decompose. Cellulose acetate fibers are thinner than sewing thread, white, and packed tightly together to create a filter that looks like cotton. Discarded filters that get into our waterways leak out the toxic chemicals they were designed to contain. These filters have been found in the stomachs of fish, birds and marine animals who mistake them for food. While cigarette butts may seem small, the accumulation of several trillion in a year's time becomes a much bigger issue. Disgarded butts ***are*** litter.

The solution: If you smoke and don't already extinguish your cigarette in an ash tray or other safe disposal bin, please, do so. And, if you have a business where smokers tend to congregate, make ashtrays available to your customers.

Worldwide, smokers toss 4.5 trillion cigarette butts per year.

Dog waste is not fertilizer! Always dispose of pet waste properly.

Photo: Wash. St. Dept. of Ecology, King Co., Bellevue, Seattle, Tacoma & Puget Sound Action Team

The scoop on poop

Pet waste is a subject most people would like to avoid. After all, we love our four-legged companions and it's perfectly natural for them to poop outside. One problem with pet waste is the sight and smell in public areas. And most often, waste left behind on sidewalks, streets and grassy areas is from dogs whose owners are in denial about their pooches' leavings. These deposits are smelly and unsightly and pose a health risk to pets, water bodies and people. Like human waste, animal waste may contain harmful bacteria and viruses that make water unfit for irrigation, recreation, or other uses. In addition, pet waste contains nutrients that increase the growth of nuisance algae in waterways.

The solution: Bag that poop and discard it in a trash can or, without the bag, down the toilet.

Just because it can't be seen...

Water pollution is not always visible. While cigarette butts might bob on the surface, pollutants from animal waste may not be as visible. Remember, little things add up. Contaminated water starts by destroying aquatic life and reduces its reproductive abilities. Eventually, it becomes a threat to human health. The reality is, nobody escapes the effects of water pollution.

More Stormwater Connections

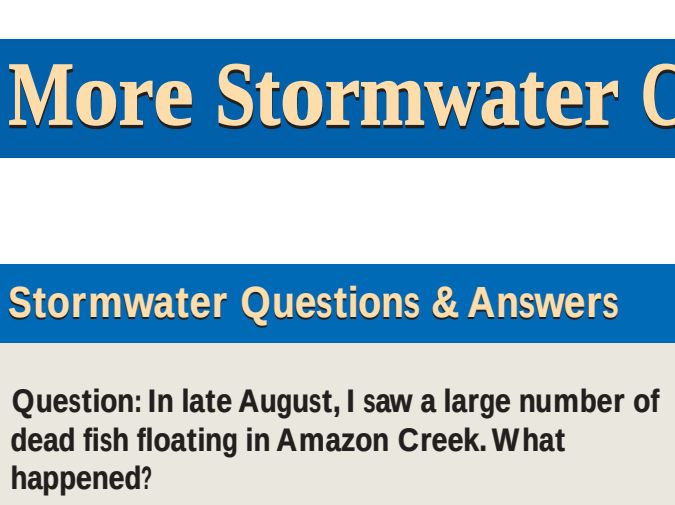
Stormwater Questions & Answers

Question: In late August, I saw a large number of dead fish floating in Amazon Creek. What happened?

The fish casualty (approximately 90 carp, 3 catfish and a chub) was a result of natural and people related causes.

In the summer, Amazon Channel has a lower volume of water in it. With less water and warmer weather, water temperatures tend to be higher. These conditions result in lower oxygen levels. Fish and other wildlife are dependent on plant life to create more oxygen in the water.

After a long streak of sunny days without rain or much cloud coverage, algae began to grow at an accelerated rate. After receiving a heavy rainfall, the algae bloom started to die off and began absorbing large amounts of oxygen from the water. The rain also flushed lawn chemicals, biodegradable materials and animal waste into and through the stormwater system and out into Amazon Creek. Since these pollutants also require oxygen when they break down in the water, there wasn't enough dissolved oxygen available in the water for the fish to survive.

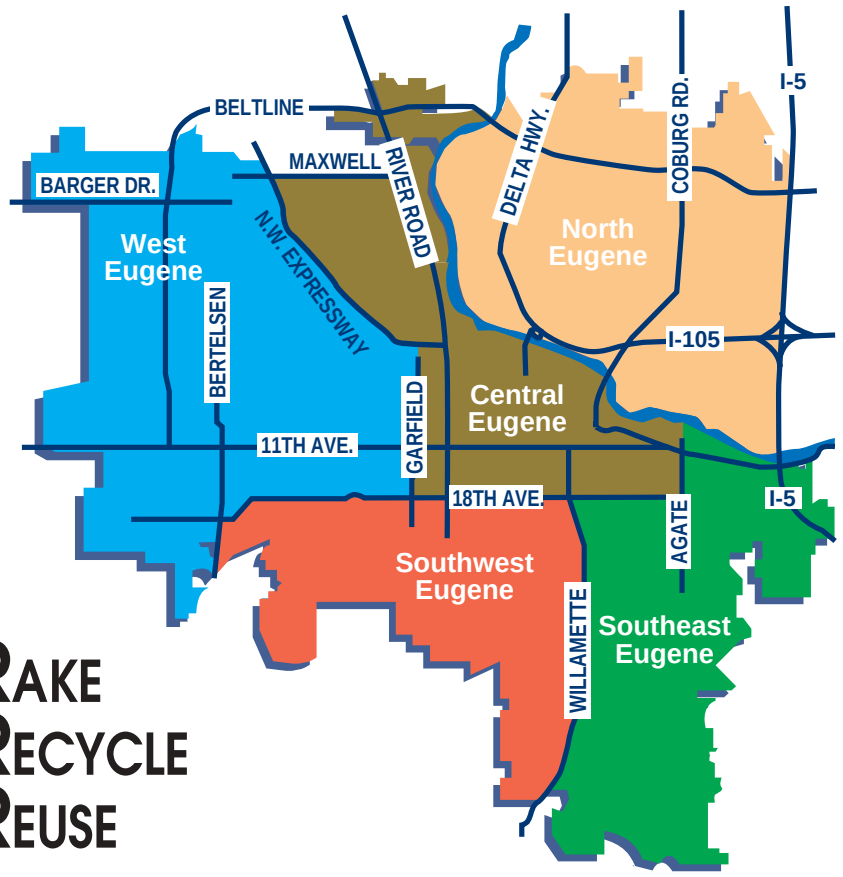


A combination of low water volume, high water temperature, low dissolved oxygen, and pollutants washed into the creek from storm drains proved to be deadly to fish in Amazon Creek.

Question: To eliminate weeds and moss in the street and gutter in front of my house, I sometimes use herbicides. Isn't that okay?

No, it's not okay! Herbicides should not be used where they could enter the public stormwater system or open waterways. Streets and gutters are part of the stormwater system that conveys stormwater runoff into local rivers and streams. It is a violation of Eugene City Code to deposit any non-stormwater substance(s) into the public stormwater system.

2004 Leaf Collection Map



RAKE
RECYCLE
REUSE

Leaf Collection Is Now In Progress

If you plan to use the city's leaf collection program, remember to put leaves out the week your area is scheduled for pick-up. Leaf piles left out for extended periods can plug storm drains and be a safety hazard to pedestrians & bicyclists.

First cycle:

West Eugene	November 1st – 5th
Central Eugene	November 8th – 12th
North Eugene	November 15th – 19th
Southeast Eugene	November 22nd – Dec 3rd
Southwest Eugene	December 6th – 10th

Second cycle

West Eugene	December 13th – 17th
Central Eugene	December 20th – 31st
North Eugene	January 3rd – 7th
Southeast Eugene	January 10th – 14th
Southwest Eugene	January 17th – 21st

Keeping leaves off city streets and out of storm drains helps prevent localized flooding.

Planning on putting out leaves for collection?
Please follow these guidelines:

- Keep sidewalks, bike lanes, and traffic lanes clear
- Place leaves in a row at least a foot away from the curb to prevent blocked gutters and clogged storm drains
- Pile leaves at least 15 feet away from parked vehicles
- Keep leaf piles free of sticks, pine needles, and other yard debris (place organic non-leaf materials in your yard debris container)

Want more leaves than you have? Request delivery by calling 682-4800 for details. Forms are available at any community center or library.

For more information, call the leaf collection hotline at 682-5383, City of Eugene Public Works at 682-4800, or look on-line at **www.ci.eugene.or.us/pw/leaves/index.htm.**

Keeping Stormwater Clean

Don't Trash That Bulb!

You may already know that installing fluorescent lights (compact fluorescent lamps or linear tubes) in your home saves energy, which means you save money on your electric utility bill. Their efficiency and long life offers an easy way for you to conserve resources and reduce landfill waste.

But did you know that fluorescent lamps should be disposed of properly with other household waste products such as pesticides, paint, batteries and thermostats? Lane County Waste Management, the Oregon Department of Environmental Quality and local electric utilities in the Eugene-Springfield area are providing a convenient residential recycling program for spent compact fluorescent lamps (CFLs) and linear fluorescent tubes (4-foot maximum).

Fluorescent lamps require trace amounts of mercury in order to work. The amount in CFLs is extremely small (five milligrams – about the size of the very tip of a ballpoint pen). While it does not pose an immediate health risk to you or your family, it is best to keep large concentrations of bulbs out of landfills.

If a bulb breaks, sweep up (don't vacuum) the glass fragments and phosphor powder. Place the broken pieces in a plastic bag and wipe the area with a damp paper towel to pick up stray shards of glass or fine particles. Put the towel in plastic bag and take the bag to the Lane County Glenwood Transfer Station for recycling.

Compact and linear flourescent tubes are considered to be household hazardous waste and should be disposed of properly.

Take your spent bulbs to one of the retailers listed below when you go to purchase a replacement. It's that simple!

In Eugene-Springfield: Brighter Homes Lighting, EPUD Energy Store, Eugene True Value Hardware, Greater Goods, Heinke Electrical & Lighting, Jerry's Home Improvement Center, Lane Co-op SmartSource Products Center, B & I True Value Hardware

In Junction City: B & I True Value Hardware

This program is only available to Eugene-Springfield residents. Commercial businesses should contact Lane County Waste Management at (541) 682-4120.

Clean Water Matters

What's the big deal if pollutants end up in a storm drain? Plenty, if you consider that Eugene has over 139,000 residents, and stormwater runoff is not treated before it enters our streams & rivers. Leaking motor oil, soapy water from washing cars, pet waste, lawn chemicals and more can have a cumulative effect on our waterways.

What's the point of all this?

Managing stormwater runoff is a big deal for communities across the country. When Congress reauthorized the Clean Water Act in 1987, cities with populations larger than 100,000 were required to reduce the discharge of stormwater pollutants into local waterways. These cities also had to apply for an NPDES (National Pollutant Discharge Elimination System) permit through the state agency that manages these federal regulations. In Oregon, that agency is the Department of Environmental Quality.

The purpose of the NPDES permitting program is to keep our country's water bodies swimmable and fishable and to eliminate water pollutants caused by human use before the water is discharged into our rivers and waterways. Wastewater treatment plants, industrial users, and municipal stormwater drainage systems are the primary targets of this program and each is required to obtain an NPDES permit to ensure compliance with water quality requirements. The City of Eugene was issued an NPDES permit for its municipal stormwater system in 1994 and recently received a permit renewal. Smaller communities are now being required to have a permit as well. The City of Springfield recently applied for their NPDES stormwater permit and Lane County is working toward receiving a permit for unincorporated urban areas on the fringe of Eugene-Springfield metropolitan area.

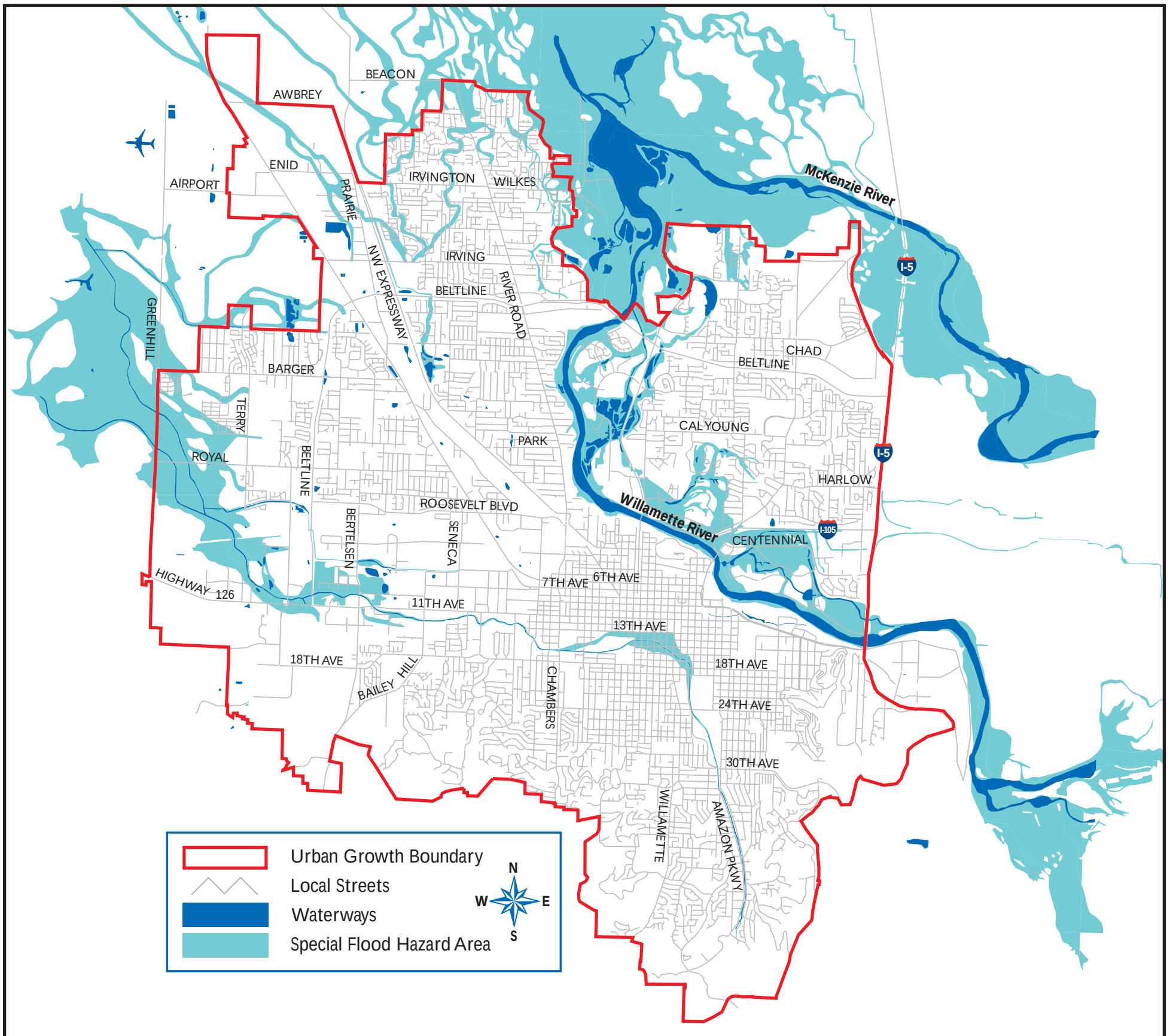
How does this affect me?

As an organization, the City of Eugene is required to use best management practices to reduce stormwater pollution from activities that negatively impact our local waterways. In addition, the city is expected to educate and provide guidelines that community members can follow to reduce stormwater pollution as well. The latest NPDES Stormwater Annual report is posted on **www.ci.eugene.or.us/pw.** For educational information, call 682-2739.

In August, an invitation to a healthy lawn care clinic appeared with this cartoon in several local papers. The workshop, offered by the City of Eugene and the Department of Environmental Quality featured lawn care expert Bruce Kreitzberg of Back to the Roots Landscaping. Bruce gave tips about healthy, attractive lawns and discussed ideal conditions for growing good, thick grass that keeps weeds down naturally.

Informational workshops like this are one of many educational activities that city staff use to meet their best management practices for the NPDES permit. For more information about upcoming workshops, events or stormwater educational materials, contact Kathy Eva at 682-2739 or by e-mail at: kathy.a.eva@ci.eugene.or.us.

Eugene Area Special Flood Hazard Zones



This map shows the extent of flooding that could occur in the event of a 100-year flood. The 1996 floods represented a 25-year flood event. The shaded area (the Special Flood Hazard Area) shows the land within the 100-year floodplain boundary that has a 1 percent or greater chance of flooding in any year.

Floodplain News You Can Use!

In an effort to better educate and assist citizens, the City of Eugene is working to improve and increase the circulation of information about developing and living in the floodplain. The Willamette River and Amazon Creek, as well as other smaller drainage ways, have been identified by the Federal Emergency Management Agency (FEMA) as being within a Special Flood Hazard Area (SFHA). SFHAs are susceptible to flooding events which could potentially pose threats to life and safety and cause significant property damage. Our area has over 5,000 individual parcels that are located in or near the floodplain. Storm events, snow melt from higher elevations, and high groundwater are all factors that can affect the chance of a flood event. Ongoing development within the area may displace natural areas that have historically functioned as flood storage. Note that flooding can occur in areas other than those designated as an SFHA.

Floodplain Information Services

Do you know if your property is located within a Special Flood Hazard Area? Ask us! City of Eugene staff provides flood map determination services to owners, lenders, and insurance agents. Services include determining whether a property is within the floodplain or floodway, the Flood Insurance Rate Map zone for the property, and the Base Flood Elevation for the property (if available). Elevation certificates that have been obtained during a building permit process are also available. Contact Public Works staff at the Permit and Information Center. Counter hours are Monday through Friday, 1:00 pm to 5:00 pm, or call us at (541) 682-8400. The Permit and Information Center is located at 99 W. 10th Avenue.

Even small rain events can cause flooding on bike paths and streets.

Flood Safety Tips

Do not walk through flowing water. Currents can be deceptive. Six inches of moving water can knock you off your feet. Drowning is the number one cause of flood-related deaths.

Do not drive through a flooded area. More people drown in vehicles than anywhere else! Flood barriers are established to keep you and your car safe. Use travel routes recommended by local authorities.

Stay away from power lines and electrical wires. The second leading cause of flood-related deaths is electrocution. Electrical currents travel through water. For your safety, do not attempt to move a downed wire. Report any downed power lines to the power company.

Have your electricity and gas turned off by the power or gas company. Some appliances, such as television sets, keep electrical charges even after they are unplugged. Remember to unplug wet appliances or motors, and do not use them unless they have been taken apart, cleaned and dried.

Look out for animals. Small animals are often displaced from their homes during a flood and may seek shelter in yours. Use a pole or stick to poke and turn things over and scare away small animals.

Look before you step. After a flood, the ground floor may be covered with dangerous debris. Watch your step. Floors and stairs that have been covered with mud can be slippery.

Be alert for gas leaks. Pipes and housing foundations can be disturbed during a flood. Use a flashlight to inspect for damage. Don't smoke or use candles, lanterns, or open flames unless you know the gas has been turned off and the area is ventilated.

Prepare an evacuation plan. An evacuation plan is a good idea in the event of any type of emergency. All members of your household should be aware of your plan, which should include a meeting place outside the house and an escape route away from flood waters.

Flood Insurance and Floodplain Regulations

Flood Insurance

The City of Eugene participates in the National Flood Insurance Program (NFIP) that makes federally backed flood insurance available for all structures, whether or not they are located within the floodplain. More than 25 percent of NFIP claims are filed by properties located outside the SFHA. The NFIP imposes a 30-day waiting period following the purchase of flood insurance. Flood insurance should be purchased before the onset of the rainy season to ensure coverage during the flooding season.

Membership within the NFIP — and the availability to Eugene residents of flood insurance — requires the City to manage its floodplain in ways that meet or exceed standards set by the Federal Emergency Management Agency (FEMA). **Because of the City's floodplain management practices, residents within the floodplain receive a 15% discount on flood insurance premiums. Those residents outside the floodplain receive a 5% discount**.

The NFIP offers two types of coverage: structural and contents. Structural coverage includes walls, floors, insulation, furnace and other items permanently attached to the structure. Contents coverage may be purchased separately to cover the contents of an insurable building. Flood insurance also pays a portion of the costs of actions taken to prevent flood damage.

Standard property insurance typically does not cover flood damage. Federal law requires that structures within the SFHA be covered by flood insurance if financing for the structure is obtained from a federally regulated or insured source — a requirement that affects nearly all mortgages financed through commercial lending institutions. This mandatory requirement stipulates that structural coverage be purchased equal to the amount of the loan, or other financial assistance, or for the maximum amount available, which is currently $250,000 for a single family residence. While the mandatory flood insurance purchase requirement has been in effect for many years, not all lending institutions required flood insurance in the past. Currently, most institutions are requiring flood insurance and some are reviewing all mortgage loans to determine whether flood insurance is required and should have been required in the past. When refinancing a loan, nearly all lending institutions will enforce the flood insurance requirement. It is the lender's responsibility to check the Flood Insurance Rate Map (FIRM) to determine whether a structure is within the SFHA.

Understanding the Floodplain and Regulations

Maintaining the flow capacity in streams requires cooperation and assistance to prevent flooding and bank erosion. Following are some suggestions and information for understanding how floodplains function and how activities within the floodplain are regulated in order to protect property and lives, while affording citizens the ability to obtain floodplain insurance.

Do not dump or throw anything into ditches or streams: A plugged channel cannot carry water. When it rains, the excess water must go somewhere. Trash and vegetation dumped into a stream degrades water quality of both the stream itself and its receiving waters, and every piece of trash contributes to flooding.

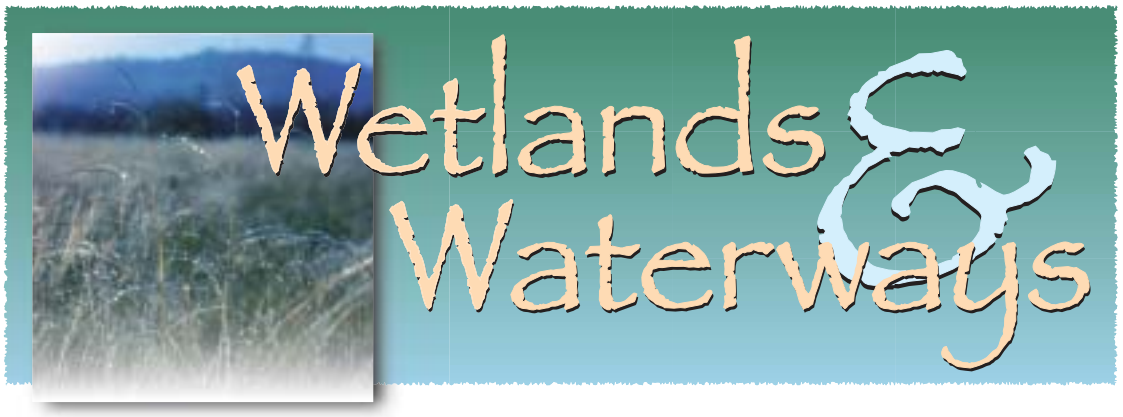
Remove debris, trash, loose branches and vegetation: Keep banks clear of brush and debris to help maintain an unobstructed flow of water in stream channels. Do not, however, remove vegetation that is actively growing on a stream bank. Streamside vegetation is tightly regulated by local, state and federal regulations.

Obtain required permits for development within the floodplain: All new construction in the floodplain must be constructed to minimize damage during flood events. Requirements may include anchoring against movement by floodwaters, construction resistant to flood forces, construction with flood-resistant materials and flood-proofing or elevation so that the first floor of living space (including all mechanical and services) is at least one foot above the Base Flood Elevation. These standards apply to new structures and to substantial improvements of existing structures. Additionally, most other types of development within the floodplain also require a floodplain development permit. These activities include grading, cut and fill, installation of riprap and other bank stabilization techniques.

Recognize the natural and beneficial functions of floodplains to help reduce flooding: Floodplains are a natural component of our environment. Protecting the natural functions of floodplains helps reduce flood damage and protect resources. When flooding spreads out across the floodplain, its energy is dissipated, which results in lower flood flows downstream, reduced erosion of the stream bank and channel, deposition of sediments higher in the watershed and improved groundwater recharge.

Floodplains are scenic, valued as wildlife habitat, and suitable for farming. Poorly planned development in floodplains can lead to stream bank erosion, loss of valuable property, increased risk of flooding to downstream properties and degradation of water quality.

Our area has over 5,000 individual parcels that are located in or near the floodplain. Improvements in managing stormwater has helped reduce historical flooding problems.



Two Projects at Dragonfly Bend Improve Stream, Riparian, and Prairie Habitats

In summer 2002, the City of Eugene used a combination of federal, state, and local funds to purchase a 70-acre site in the West Eugene Wetlands. The site, which is called Dragonfly Bend, is located immediately north of Meadowlark Prairie, and is bordered on the east by Amazon Creek and on the west by the Amazon Diversion Channel.

The City's Wetlands Program started two major habitat improvement projects at Dragonfly Bend this summer. The first project is focused on enhancing the stream and riparian habitats on the historic channel of Amazon Creek. Funded by a $740,000 Cooperative Conservation Initiative grant from the U.S. Bureau of Land Management, the project involves excavating and re-contouring the channel so that Amazon Creek can become braided, with islands and pockets of deep water within the channels. In addition, prairie habitats will be established immediately adjacent to the channels, and the streamside vegetation will be re-planted with a mixture of native riparian trees and shrubs. These types of changes will greatly improve habitat for western pond turtles and Fender's blue butterflies and increase shading of Amazon Creek. The channel banks, which are currently very steep, will also be re-contoured to create a more gradual slope, allowing western pond turtle and Fender's blue butterfly to move more easily between the creek and the adjacent prairie. Following excavation and re-contouring, the entire site will be re-planted with a wide assortment of native plants that are typical of these habitats.

The second project will enhance the 50 acres of wetlands west of the historic creek bed. Funded by the City's wetland mitigation bank, the project will generate 24 mitigation credits, which can be sold to satisfy wetland mitigation requirements for local development projects. The primary objectives of this project are to remove agricultural drainage ditches on the site, eliminate the existing non-native vegetation, and re-plant the entire site with a diverse mixture of wetland prairie and vernal pool species.

For more information about the project, contact Eric Wold at 682-4888.

Major habitat improvement projects at Dragonfly Bend will provide critical habitat for plant and animal species.

"For many of us, water simply flows from a faucet, and we think little about it beyond this point of contact. We have lost a sense of respect for the wild river, for the complex workings of a wetland, for the intricate web of life that water supports."

- Sandra Postel, *Last Oasis: Facing Water Scarcity*, 2003.

Watershed Discovery Takes Students Outdoors

For the third year in a row, Sally Grimsrud, who teaches 3rd and 4th grades at the Village School, is partnering with the Eugene Stream Team to teach her students through a year-long, hands-on program about our watershed and the role everyone plays in the health of our natural environment. The program begins with a classroom visit from Stream Team Coordinator Lorna Baldwin, who leads a discussion about the water cycle, why water is important to us and what happens to water as it moves through our city.

Students then accompany Stream Team volunteers to a nearby neighborhood and help paint storm drains with the "Dump No Waste – Drains to Stream" message. They also place educational door hangers on nearby houses that explain how residents can prevent stormwater pollution.

Subsequent trips include a visit to Amazon Creek and the wetland behind Amazon Pool where the students can explore nature in an urban setting. The program ends with a longer watershed tour that begins at Stewart Pond. With the help of Audubon/Stream Team trail guides, students see and hear about some of the wetlands inhabitants like birds, flowers, butterflies, and dragonflies. The group then studies aerial photos of Amazon Creek, makes a stop at the end of the Fern Ridge Path by Royal Avenue and eventually hikes to the top of the Fern Ridge Dam for a better view of Amazon Creek as it enters the reservoir.

It takes extra effort on this exceptional teacher's part to organize these field trips and recruit parents to help. But the learning experience for all is worth it!

Stream Team offers community members of all ages the opportunity to do hands-on environmental work, restoring and caring for the city's waterways and natural areas. For more information about this and other projects and trainings, call Lorna Baldwin at 682-4850 or e-mail lorna.baldwin@ci.eugene.or.us.

Check out the newest addition to the Parks and Open Space website at **www.ci.eugene.or.us/parks/wetlands**.

Storm drain stenciling is just one of the activities kids participate in as they learn more about their watershed.

A Tiny Frog with a Mighty Voice!

This article is all about me! Hi! I'm Lily, the Pacific Treefrog. I live in local waterways along with my friends.

Yes, Pacific Treefrogs are movies stars! Movie directors use the kreck-eck sound of Pacific Treefrogs as a background sound for night time scenes in movies.

They are everywhere! We hear them at night, we see them in the wetlands and they even star in Hollywood movies! Only two inches long, the Pacific Treefrog is the most common frog found in the Willamette Valley. And, though they are called a "tree" frog, they are more likely to be found on the ground than in the trees.

Pacific Treefrogs can be found in drainage ditches, near ponds, and even in your garden. Treefrogs are usually green, but can change their color to tan or brown to blend into other backgrounds. No matter what color they are, they all have a distinctive black stripe across their eye.

Female Pacific Treefrogs lay their eggs in masses in water. The eggs hatch into tadpoles (sometimes called "pollywogs"). Tadpoles breathe through gills and have tails that help them swim in the water as they eat and grow. As the tadpoles grow, they develop legs, and then arms, but still breathe through their gills. Tadpoles mature into froglets, which look like an adult frog with a tail. Froglets breathe through their lungs and absorb the tail as they mature into adults.

Pacific Treefrogs, like all other creatures, need clean water to live in order to survive. What can you do to make sure our local streams and rivers stay clean? Never throw litter in the street or put anything but clean water down a storm drain. Ask your parents to reduce the use of chemicals in your yard. And, if you meet a Pacific Treefrog, treat it gently!

This little Pacific Treefrog has found a comfortable place to rest in the garden.

Some frog facts:

Frogs are amphibians

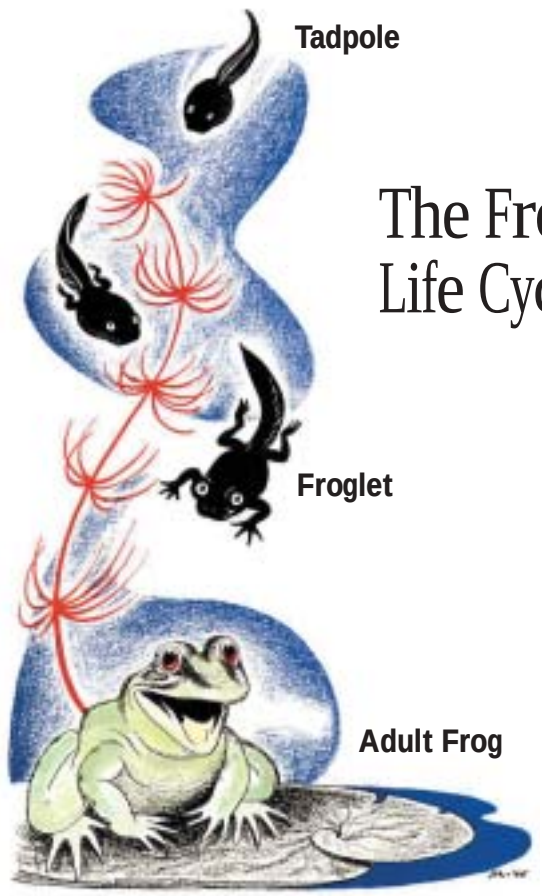
The word amphibian is derived from the Greek word amphibious, which means "living a double life." Frogs spend most of their adult life on land, but lay their eggs in water.

Toads hop, frogs jump

Because of their strong legs, frogs can jump 20 times their length. If you could jump 20 times your length, you would be able to jump 100 feet!

Frogs are Jurassic

The earliest known frogs lived in the late Jurassic period along with dinosaurs. That was 190 million years ago!



The Frog Life Cycle

Have you seen this frog?

This is a bullfrog — a frog that is not native to Oregon. Bullfrogs have a huge appetite and eat baby turtles, rodents, birds and even other frogs!